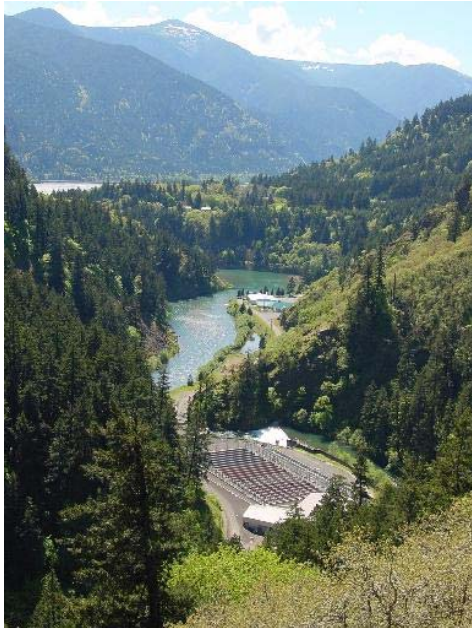


Hatchery Update

Little White Salmon National Fish Hatchery



About Little White Salmon National Fish Hatchery

The Little White Salmon National Fish Hatchery (NFH) was established in 1896 and is the oldest federal hatchery on the Columbia River. Congressional authorization was based on the intent to supplement the commercial fishing industry. The hatchery's role expanded during the 1930's with the enactment of the Mitchell Act and further amendments in 1946. The Mitchell Act was enacted to mitigate for fisheries lost due to the construction and operation of Columbia River hydroelectric projects.

The hatchery is located 12.5 miles east of Stevenson, Washington, off State Highway 14, Columbia River mile 162. The hatchery is located on 410 acres of Service land.

Rearing facilities at the Little White Salmon NFH include 9 – 8' X 79' covered raceways, 22 – 10' X 110' open raceways, and 2 – 10' X 235' open raceways. The total nursery capacity is 11.25 million eggs.

Little White Salmon NFH became the first hatchery in the Nation to receive the U.S. Fish and Wildlife Service Environmental Leadership Award in 2004.

Hatchery Mandates

Little White Salmon NFH operations ensure that the U.S. Fish & Wildlife Service meets mandated Treaty Trust responsibilities. The current production program is guided by specific fish production goals identified in the Columbia River Fish Management Plan. This plan was developed as a result of the *U.S. v Oregon* agreement, to address Native American fishery concerns. Fish production goals include:

- 1,000,000 yearling spring Chinook salmon released on site.
- 210,000 yearling spring Chinook salmon released on the Umatilla Indian Reservation using native, locally adapted stocks.
- 2,000,000 subyearling upriver bright (URB) fall Chinook salmon released on site.
- 1,700,000 subyearling URB Fall Chinook salmon released off site on the Yakama Indian Reservation as part of mitigation for John Day Dam and to restore this stock to historic levels.

Cultural Values

The Columbia River Treaty Tribes (Yakama Nation, Confederated Tribes of the Warm Springs Reservation of Oregon, Nez Perce, and Confederated Tribes of the Umatilla Indian Reservation) share the in-river harvest of spring Chinook, URB fall Chinook, and coho returning to the Little White Salmon NFH. Surplus fish are provided to the Yakama Nation to support the tribal nutrition program and for ceremonial use. The cultural significance of these fish to the tribes is best characterized by the following quotation:

"Salmon was presented to me and my family through our religion as our brother. The same with the deer. And our sisters are the roots and berries. And you would treat them as such. Their life to you is just as important as another person would be."

Margaret Saluskin, Yakama Nation, Columbia River Inter-Tribal Fish Commission.

Adult Escapement Goals

A minimum of 1,850 adult URB fall Chinook salmon and 1,000 spring Chinook salmon are necessary to collect enough eggs for full production as mandated.

Coded-Wire Tag Marking Program

Marking of fish using an adipose fin clip and/or coded-wire tagging technology makes determining survival rates and contribution of salmon to the various fisheries in and out of the Columbia River possible. At present all spring Chinook salmon are fin clipped with 75,000 being coded-wire tagged. This mass marking of spring Chinook complies with selective fisheries management practices now instituted for hatchery releases into the Columbia River.

Starting with the 2005 URB fall Chinook salmon, fall Chinook salmon releases from the hatchery are 100% adipose fin clipped and a portion are additionally coded-wire tagged to access survival and fisheries contribution. This change from past URB fall Chinook salmon releases represents an effort to mark all hatchery salmon reared and released into the Columbia River. This marking effort is dependent on annual funding and equipment availability.

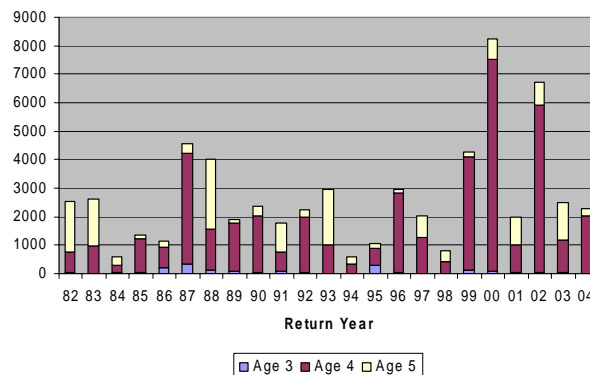
Sampling of Returning Fish

A proportion of returning adults are sampled at each hatchery. Sex and length are recorded and scales are collected to determine age. By using sample information and the number of returning fish, it is possible to calculate the number of returning fish for each age group and, consequently, the number of fish returning from each brood year or release year.

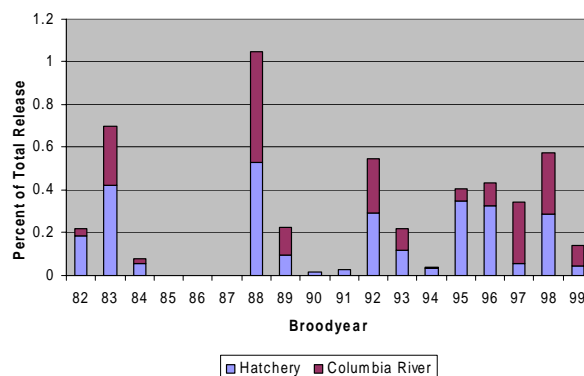
Spring Chinook Salmon

Most returning adult spring Chinook salmon return as 4 year olds. Almost all spring Chinook are harvested in fresh water in the Columbia River. The majority are harvested in the sport fishery in Drano Lake, just below the hatchery. Fish are harvested in the terminal tribal gillnet fishery at Drano Lake and in the mainstem Columbia River as well, when a commercial fishing season is allowed.

Number and Age Composition of Returning Adults
Spring Chinook Salmon



Little White Salmon Spring Chinook Salmon
Percent Recoveries



Evaluation of Raceway Baffles to Enhance the Rearing of Hatchery Fish

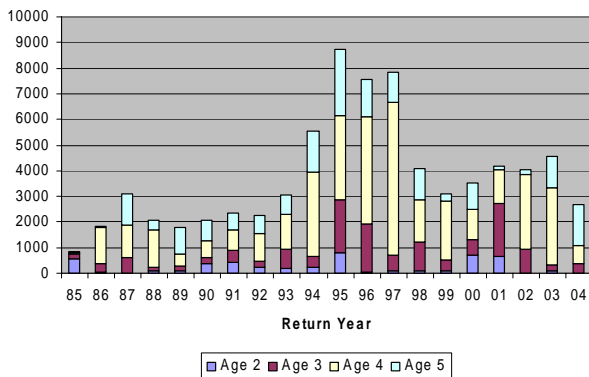
Baffles, or raised partitions spaced equally along the length of a hatchery raceway, increase velocities along the floor of the raceway while providing resting areas higher in the water column. This diversity in water flow simulates a more natural rearing environment and makes the raceway self-cleaning. The increased floor velocity moves solids generated by fish to the tail end of the raceway allowing easy removal during cleaning. A study is being conducted to evaluate the performance of fish reared in baffled raceways to a group reared in conventional, unbaffled raceways. Growth rates and fish health are being closely monitored in each group. In addition, both study groups contain 75,000 coded wire tagged fish that will allow biologists to determine if use of raceway baffles during hatchery rearing has an effect on adult fish return rates in subsequent years.



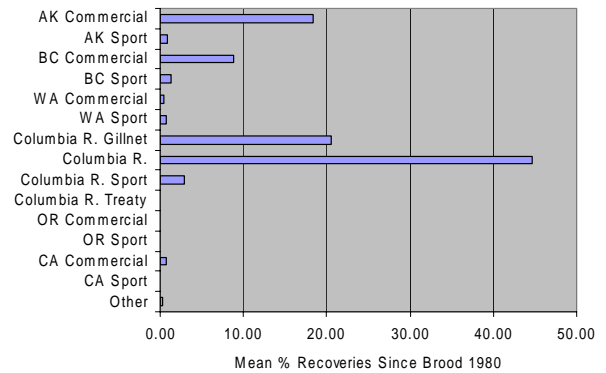
Upriver Bright Fall Chinook

Most URB fall Chinook salmon return and are harvested at age 4. These fish have contributed to commercial and sport fisheries along the west coast of the U.S. and Canada from Alaska to California. Commercial fisheries in Alaska, British Columbia and gillnet fisheries in the Columbia River harvest the majority of the fish. In the 2004 Drano Lake tribal fishery, over 3500 fall Chinook salmon were harvested. These fish also contribute significantly to the sport fisheries in the U.S. and Canada.

Number and Age Composition of Returning Adults
Upriver Bright Fall Chinook



Upriver Bright Fall Chinook



Assessment to Determine the Effect of Current and Alternate Ladder Operations of Brood Stock Collection and Behavior of Hatchery Fish

In most years more fish return to the hatchery than are needed for brood stock. The hatchery ladder is currently operated until maximum densities in the holding ponds are achieved. When this occurs, the ladder is closed until excess fish are randomly removed from the ponds or fish are removed during spawning for return to the Little White Salmon River. The ladder is then reopened to continue collecting adults from the full spectrum of the run. Fish not collected by the operation of the hatchery ladder or returned to the river spawn naturally, promote stream nutrients, support local populations of wildlife, and promote fishing for sport and tribal fisherman. Tagging and tracking the movements of these fish beyond the needs of the hatchery provides additional information on the final destination and outcome of ladder operations. Additionally, the ladder operations assessment identifies potential ecological impacts of hatchery operations. This study began in 2004 and may continue in 2005 dependant on funding.

For more information, please contact:

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